TC/PC Exists to Facilitate and Encourage the Cooperative Exchange of PC Knowledge and Information Across All Levels of Experience

November 2020

General Meeting
Tuesday, November 10, 2020
7:00 PM

How to Use Free Online GIS Tools to Enhance Your Outdoor Experiences

Presenters: James Grotz and Don Kick
Via Zoom

Are you tired of being "Cooped-Up with Coronavirus"? Do you yearn to get out on the trails biking, backpacking, bird watching or bowhunting? Join our November General Meeting session on Zoom and learn about free applications and information available online to plan your next outdoor outing. Topics to be covered include how to use the online: Minnesota Atlas, Minnesota DNR Landview, Google Earth Pro, Minnesota Geospatial Commons and Minnesota DNR GeoPDF's to plan in advance your next outdoor outing. There are hundreds of database overlays available free at your fingertips. These applications cover Minnesota and North America.

Are you worried when you do go out on outdoor outings you will get lost? There are free applications and maps including GeoPDF maps that run on your cell phone and allow you to see your current location without the need for expensive cell phone data plans or a separate GPS device. Applications like Avenza Maps and similar use the GPS antennas in your cell phone to pin point your current location on your GeoPDF app while on your outdoor adventure.

Our presenters will be Jim Grotz and 30 year DNR staff member Don Klick of Ely, Minnesota; Ely is the gateway to the Boundary Waters Canoe Area Wilderness (BWCAW). The goal of the presenters is to make you aware of what is available as free information at your fingertips, or only a few clicks away! Please join our November 10th Zoom meeting and learn of these free Geographic Information System (GIS) software tools. 🖥

Tech Topics with Jack Ungerleider via Zoom at 6pm before the General Meeting.

The Digital Viking

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Plan 9 for Windows 10

By Greg Skalka, President, Under the Computer Hood User Group
Drive Light Newsletter, [www.uchug.org,](www.uchug.org) president (at) uchug.org

In "Plan 9 from Outer Space," a low-budget 1959 sci-fi horror movie from Ed Wood, extraterrestrials in flying saucers try to stop the rash and violent humans on Earth from advancing their technology further and risking the destruction of the universe. They finally resorted to 'Plan 9', which involves resurrecting an army of dead humans to get our attention. The film is narrated and introduced by The Amazing Criswell, who greets the viewer with: "We are all interested in the future, for that is where you and I are going to be spending the rest of our lives!"

In the present day, minute spongy beings from a part of the galaxy known as Redmond Washington strive not for the attention of humans, but for their resources. Their goal to dominate the computer activities of humans has been successfully achieved over the last three decades through their operating systems and office suites. Their seventh Plan was highly successful, though their eighth was a flop and resulted in their loss of control over many humans. Faced with losing the human's interest to other operating systems and new portable devices, these beings enacted Plan 9, which involved subscription software and a new OS, not referred to by the number 9, but instead 10. To tighten their grip on the resources of those humans still under their influence, they made their Plan 7 obsolete, hoping the humans would flock like zombies to their latest offering. Just as Criswell asks at the end of the 1959 film, "Can you prove that it didn't happen?"

With Windows 7 security updates ending on 1/14/20, I knew last year that Windows 10 would be in my future, and so started making plans for switching my family over. I went through quite a few plans and a fair amount of resources, and though not quite as daunting as raising the dead, it was and continues to be a challenge that I hope to work out completely in the future. Here are the first four of my nine plans to that end.

Plan 1 - My Wife's Desktop PC. Way back in October 2018, I was anticipating the end of Windows 7's security in a year and formulating a plan to continue safe computing in the new decade. I wrote a newsletter column that month, outlining the pros and cons of the alternatives as I saw them. I recognized that I would be living dangerously in 2019, needing to do something before Win7 security updates ended on 1/14/20.

I was definitely going to be at risk, as practically all our computers were running Windows 7. My wife's nine-year-old Acer desktop PC seemed to be constantly on the brink of a calamity, though I somehow managed to overcome minor hardware failures and Windows issues to keep it running. My primary computer was a six-year-old Fujitsu 14" laptop which ran fine, probably due to the care I gave it. My wife also had a six-year-old laptop. These Win7 computers met our needs, though due to their age lacked more modern features like USB3, Gigabit Ethernet, and solid-state drives. I'd put in upgrades where I could, but they were all past their primes.

I did have a two-year-old Lenovo desktop I had bought for myself and turned into what I call my "chameleon" computer. I had installed a 3.5" bare hard drive dock in a front bay in the case, so the boot hard drive could be easily changed. I envisioned having many boot drives with different operating systems for this computer, but I have only set up two so far - the original Win7 and a Win10 drive that I created by cloning the original drive and upgrading it while Microsoft was still offering free Windows 10 upgrades in 2016. Since I used Win7 at work and Win10 seemed a bit unstable in this upgrade arrangement, I really never used this computer, preferring to stick to my laptop.

The good husband that I am (and because I tired of working on her PC), I planned to replace my wife's computer first in this conversion to Windows 10. None of our computers were worth upgrading, and I was less than thrilled about the results of my one upgrade experience. It was about time we got some new hardware with new features anyway.

I starting looking but didn't find any good deals for Black Friday in 2018. I unfortunately also am the type of person that needs a deadline to get motivated to do something, and January 2020 was still almost a year away. After seeing how Fry's Electronics seemed to be slowly circling the drain, I widened my search for computers and in August 2019 found a good deal at Costco. I bought my wife a Dell Inspiron 3670 desktop for $549 (it was $150 off). It had all sorts of good things, like a 9th generation Intel I5 processor, a 1 TB hard drive, and a 128 GB SSD, USB3.1, GigE, and HDMI. I was concerned about the relatively small SSD filling up, as in the past my wife and Microsoft's upgrades had often conspired to fill up the boot partition on her old PC. A good friend with extensive Win10 and SSD experience reassured me that 128 GB would be sufficient for the boot drive.

Plan 2 - Dual Monitors. A few weeks later, with the Dell PC box still unopened, Costco had a sale on Dell 24" monitors. I had been using dual monitors on my Win10 computer at my new job and really liked it. I bought two monitors for my wife's new computer, thinking it would help her feel better about the hassle of having to change computers. My friend reviewed the Dell computer's specs and assured me that it could run one monitor from the VGA out and the other from HDMI.

Plan 3 - My Mom's Desktop PC. Move ahead to November 2019, now only two months before the Win7 apocalypse. I still have not found the time or the urgency to open the box on my wife's new PC. I'm in Costco again and see that they are still selling the same model Dell PC (which is reassuring), and it happens to be on sale again for the same price. I knew my mom needed a new computer to replace her old Win7 desktop, and I had not come up with a Christmas gift for my parents. I decided to double down on the Dell computer and buy another one for them.

Now I had a bit more urgency, as I wanted to get it set up for them before Christmas, but unfortunately had no more spare time. I needed to set up my wife's PC first, so I finally opened the box on hers on December 23, as I had that week off from work.

Plan 4 - UEFI. I connected up my wife's new Dell PC on a card table with one of the new monitors. It powered up fine, and I saw that it had 36.6 GB used on the 128 GB SSD, with

67.1 GB free. I assumed (as I later confirmed) that Dell had used some of the SSD for recovery and diagnostics partitions, so the SSD was initially only 36% full, which seemed reasonable. After activating Windows, my next step was to make a backup of this "as delivered" configuration.

I have been using Acronis True Image for computer backups for many years and have been very happy with it. I know it works well as I have restored many times, the true test of a backup program. Although it can be installed on a PC, I have never done this. I prefer to use the boot CD that comes with the software to boot outside the OS and back up using the version running from the CD. There are fewer features in this version, but since I would need to use the bootable version should I have a hard drive failure, I felt always using it would make me more familiar and confident with it.

I pulled out my True Image 2017 CD, which had worked to back up my Win10 chameleon computer but ran into something new - UEFI. It stands for Unified Extensible Firmware Interface and is a replacement for the old BIOS (Basic Input/Output System) firmware that is now prevalent on new computers. It has many more capabilities and is more secure than the old BIOS. On this Dell, it was accessed the same as a BIOS, by holding the F12 key on startup. I selected the UEFI loader option in the displayed boot menu to boot from the DVD drive.

My True Image 2017 CD booted fine, but when running, the SSD drive did not show up in the program. Only the 1 TB hard drive was visible, so I could not back up the SSD. Seeing on the Acronis web site that I could no longer get support for my old version, I ordered the latest version, True Image 2020, from Amazon (at a lower cost than that listed on the Acronis site).

When my Amazon True Image arrived, I realized I had ordered a box with only an activation code - no CD was enclosed. I would have to download the software from the Acronis website. I was able to register there and download a bootable image file to burn to a DVD. Unfortunately, booting the new bootable version resulted in the same problem - the SSD was not visible to the program.

I finally had to break down and install True Image 2020 on the new computer, and when I ran it under Windows, the SSD was finally visible. I found an option under the rescue media builder tool for the simple method, which configures the boot media it creates to suit this computer best (no doubt taking UEFI into account). When I created a boot disc in this way, the bootable version was at last able to see the SSD. I could finally back up the way I was accustomed to, but now had a program installed that I didn't intend to install. My first back-up showed that 42.32 GB out of 103.8 GB on the SSD was now used (now 41%).

Feeling even more concerned about filling up the SSD, I decided that partitioning the 1 TB hard drive might help. If I split it into a 200 GB APPS partition and an 800 GB DATA partition, I could more easily install less critical programs on the hard drive, saving space on the SSD. I obviously could do this with the hard drive as it was, but a separate data partition would help in segregating backups of her critical and more frequently changing data.

I looking into using my standard partitioning program, Acronis Disk Director 12, but found again that when booted from its boot disc (as I'd have to use it if I were partitioning a new blank hard drive following an existing drive failure), it would not work. Per their web site, I'd need new Disk Director 12.5, which would support Win10. In a hurry, I downloaded and installed the 12.5 demo version from their web site, and while it would set up to partition, it would not create one (I'm not sure what it was supposed to be demonstrating). Fortunately, I remembered to look up Acronis on the APCUG web site and found a 5/25/19 article on Disk Director 12.5 and the link to Gene Barlow's User Group Relations web site. Gene represents Acronis products to user group members and sells download versions at a significant discount from the Acronis web prices. I purchased Disk Director 12.5 and got his email with the product key the next day.

After putting the key into the demo version I had already installed (yet another install into the SSD!), I was able to easily partition the 1 TB hard drive the way I wanted it. I did make many attempts to create a working boot media (meaning one that would see both drives in this computer) with the Disk Director Media Builder tool, and though there were many options, none I tried were successful. I didn't care at the time to partition the SSD, but someday I'll have to email Gene to see if he has a solution.

I next installed some essential utilities like the Chrome browser, Adobe reader, and printer drivers for our two HP network printers (all on the SSD). A new backup showed the SSD was now at 45% full. I was now almost ready to make the swap - this new Windows 10 PC for my wife's old Win7 desktop. I'd still have to transfer data and other programs over from old to new, and this would require a new plan. Unfortunately, it was now January 12, 2020, only two days before Win7 security support ends.

I'll describe my Windows 10 Plans 5 through 9 in a future column (where Criswell predicts we will all be in a month)🖥

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SOC - Save Our Connectors
By Greg Skalka, President, Under the Computer Hood User Group, CA
Drive Light newsletter, www.uchug.org, president (at) uchug.org

In the early part of the 20th century, the internationally recognized way to signal that your ship was in distress was to send a radio telegraph message of three dots, three dashes, and three dots in Morse Code. This translated to "SOS", which, though selected as a distinctive pattern, became associated with the phrases "Save Our Souls" and "Save Our Ship." Though rarely used in Morse Code these days, SOS in the printed and spoken forms is still associated with distress situations.

When our tech devices are in distress, they seldom send us such a clear and unmistakable signal of their condition. We usually have to interpret indications of faulty operation to determine when and why our devices are having problems. One problem our devices can have is failing connectors. There are very few truly "wireless" devices in our technology collections; most involve connections through wires or cables at some point in their operation. Interconnecting, charging, and reading/writing data to devices almost always involves some wired connections. These wired connections are typically made through physical electrical connectors on the devices and cables, and unfortunately, these connectors, being mechanical, can and do wear out and fail, especially if frequently connected and disconnected.

We may think of our smartphones as wireless devices, and in most modes of operation, they are. They still come with an electrical connector, however, as that is the most convenient and sometimes only way to charge their internal battery and connect them to other devices for data transfer. The connectors used are usually USB, typically the large Type-A on computers and the smaller Mini, Micro, and Type C on portable devices, while Apple products use the small Lightning connector. These connectors have a rated life that often ranges from a thousand insertions or removals to ten thousand, with 5,000 typical for a good connector. Five thousand connections or disconnections for a connector's lifetime may seem like a lot, but if you charge a smartphone every day, that uses up two per day or 730 in a year. Connect to the phone three times a week to offload photos and you have over 1000 connections per year, meaning your phone's connector might work reliably for only five years.

If you bought a lower-end product, used poor-quality cables, or used less care in connecting them or protecting them while connected (allowing large side forces on the cable connector, for example), the lifetimes of the connectors will wind up being even shorter. Lower-cost devices and cables may use low-cost, less reliable connectors. Some connector types may be less costly to manufacturers but also less reliable (such as the now less frequently used USB Mini).

In the test engineering world, especially for military products, connector savers are often used to prevent the useful life of product connectors from being reduced by

interconnections made in product testing and debug. Connector savers are small adapters with the same type on each end, but with opposite genders. When plugged into a product connector, the connector saver presents to the world the same type and gender as the product connector. The

Photo 4: 4 wire Magnetic Data Cable and Adapter on Phone

Photo 1: Magnetic Power Cable

connector saver is plugged into and removed from the product only once in the test cycle, with any necessary additional connections made during testing to the expendable connector saver.

To make your consumer electronic products last longer, you should extend the connector saver concept to your heavily used devices. I have had several perfectly good tech items become unreliable or unusable due to connector problems. Fortunately, there are ways to improve the reliability of failing connectors, as well as steps that can be taken to prevent connector wear failures and extend the life of product connectors.

For most of us, our smartphones are in constant use, sometimes requiring multiple charges per day. The risk of wearing out the power/data connectors (on device and cable) is significant if you plan to keep the phone for some time. The cable can usually be

replaced when its connectors become unreliable, but when the phone's connector wears out, it usually cannot be changed. Fortunately, there are now some new products that follow the connector saver concept for USB Micro and C connectors, as well as Apple Lightning.

Photo 2: Mag Cable Adapters - C and Lightning and Micro

Photo 3: Magnetic Power Cable Adapter

Search "magnetic charging cable" on Amazon and you will find some products that hold contact connections together using small but powerful rare-earth magnets. A small magnetic connector adapter is plugged into the phone connector; the cable connects to this adapter through a strong magnet in the cable end, holding them together. This saves the phone's connector as the adapter remains with the phone and the connection breaks between the two magnetic pieces.

There are cables for charging only (a two-wire connection) as well as cables for data transfer (four-wire). Most come with adapters for USB C and Micro, as well as Lightning.

I have been using a magnetic data cable with my Samsung smartphone for a month and it works well for charging and transferring data (I have used the Amazon TOPK data cable set and the power cable I have been using a magnetic data cable with my Samsung

smartphone for a month and it works well for charging and transferring data (I have used the Amazon TOPK data cable set and the power cable set by Terasako

Because these tiny adapters contain powerful neodymium magnets, care must be taken to keep them away from anything that is magnetically sensitive. The adapters are small and pose the same risks to children as small neodymium magnets.

Another connector saving option for smartphones, smartwatches, and tablets is the inductive charger. Many devices, including some from Apple and Samsung, follow the Qi wireless charging standard. A wire coil and additional circuitry built into these phones and devices allow a complimentary charging pad to transfer power to the device through inductive coupling. Small wireless charging receiver pads can also be added to the outside of older smartphones (plugging into the normal charging connector) to make them compatible with the Qi charging pads. These wireless charging schemes eliminate connector wear, but inductive charging is less efficient (may take longer) than direct charging.

Photo 5: Mag Cable Charging a Smartphone

Photo 6: iPhone on Inductive Charging Pad

Though the magnetic charging cables work well, I've yet to find one that includes USB Mini in its adapter line-up. The USB Mini connector has a reputation for poor reliability, yet it has been used on many non-phone tech products. I have had three products so far with failed USB Mini connections.

I once had a set of three identical USB2 external, hardware-encrypted hard drives (2.5" drive form factor) that I used to store and back up my most important personal and financial data. The drives had USB Mini connectors on their cases and connected to PCs through USB A to Mini cables that came with the drives. After years of use (where I disconnected the cables from the drives when not in use), the cable connection to the drives became unreliable. Trading the cables around helped, as did twisting the cables to put more pressure on the connector, but eventually, I was forced to buy new USB3 drives and discard the old ones. My new drives have a different USB3 connector, but I now leave the cables connected to those drives.

I have a pair of rechargeable bike lights (front and rear) that I normally recharge at least once a week; they have USB Mini connectors to their charging cables. Recently I have been having problems charging them; I've had to twist the cable around to make good contact with the connector in the lights. A USB Mini magnetic charging cable would help, but they are not available.

Figure 8: Bike Lights with Adapters & Mag Cable

Photo 8: USB Mini Adapter

I was able to buy a small USB Mini to USB Micro or C adapters. I cannot keep these adapters on the lights as connector savers, as they are too big in this application, but the adapters do help make a better connection to the lights. I am presently using the adapters in conjunction with the magnetic charging cable; this has improved the reliability of the connection. Since I am still making frequent connections to the light's connectors, I will no doubt eventually need to buy new bike lights.

I have an auto dashcam (photo 9) that I normally power from a battery through its USB Mini connector. For several years I frequently moved it between cars, disconnecting that Mini connection and eventually wearing it out. Fortunately in this application, I can use the same USB Mini adapter but leave it on at all times, disconnecting it at the magnetic charging/data cable. This seems to be more reliable, and I will now not have to wear the dashcam connector out any further.

Photo 9: Dash Cam with Adapter and Mag Cable

Photo 10: USB2 Hub and Flash Drive

The USB Type-A receptacle connectors used on computers and laptops are very robust, but even they wear out eventually. I still run an XP computer as it supports interfaces and programs I cannot run elsewhere. I no longer have it connected to my home network, so I transfer files to and from it through USB Flash drives. After 15 years of use, the two front-panel USB ports on the computer have become unreliable; I often must wiggle the Flash drives to allow them to be recognized. To provide continued access to the computer, I connected a cheap four-port USB hub into one of the computer's rear-panel USB ports. This provides handy access and acts as a connector saver for the rear ports.

Though your device connectors cannot send a distress signal (other than by failing), you can help extend their lives by using the connector saver concept on heavily-used connectors where possible. Magnetic charging cables, wireless inductive chargers, adapters, and USB hubs can all play a part in reducing connector wear and keeping your devices running longer. Avoid connector disasters - Save Our Connectors!🖥

Thinking of Buying a New Router?

By Jeff Wilkinson, President, Sun City Summerlin Computer Club
April 2020 Gigabyte Gazette, www.scscc.club, pres.scscc (at) gmail.com

Purchasing a new router can be an intimidating task. Trying to decide what you need and how to make the correct selection from the myriad offerings can certainly use some clarification. Having just gone through this experience, I thought I'd offer some guidelines.

If you have a modem/router supplied by your internet service provider and you are tired of paying a rental fee each month, you may also want to consider *purchasing* your own modem and router.

Overwhelming as it can be, let's see if we can sort it out. Your router is the central hub of your home network. The internet connection is input to the router from the cable modem and the signals are "routed" to your devices by either direct connection or Wi-Fi. You will want to choose a router that is powerful enough and has enough features to service all your current devices and has some expansion or growth capacity for future needs.

A first step would be to estimate the number of devices you expect to connect to your network via Wi-Fi – such as your smartphone, laptop computer, a streaming device like a Roku or Amazon Fire TV, Wi-Fi thermostat, newer IoT appliances, and Kindle devices. Next look at the size of your home and the locations where you will be using any of the wireless devices. If your home is over 2,500 square feet, you may want to consider a mesh wireless system. That requires multiple devices and can become expensive and is generally not needed in our community. Expensive doesn't always mean better!

Then consider the location of your internet connection, where your cable modem is located, or where the internet connection enters the residence. This is the location where you would most likely locate your router and you would want it to allow for strategic placement of the router. Up high rather than on the floor is desired. Open surroundings rather than behind equipment or in a cabinet would also be preferred. Looking at routers and their advertised specs, they often sum up speeds of the various bands which is a meaningless number for all practical purposes. If the top speed from your Internet Service Provider (ISP) is 100 Mbps having a router capable of 800 Mbps is not necessary. An AC750 would work well for a single user.

You will want to look at routers with an "AC" prefix on the model number, AC750, AC1750, AC1900, etc. The AC prefix indicates WiFi-5 standards and AX indicates WiFi-6, which is the current latest standard but can be a bit pricey. Many of your current Wi-Fi devices won't support the AX standard. The iPhone 11 and Samsung Galaxy S10 are exceptions.

The numbers after the prefix give you a rough sense of the combined speeds of each of the router's bands - typically 2.4 and 5GHz, and perhaps a second 5GHz band if we're talking about a triband router. Since a device can only use one band at a time the number is not all that relevant and is a theoretical number achievable in a controlled lab environment, maybe. Of course, your speed will vary!

For the typical user in our community, someone who uses the internet to check email, surf the internet, buy online occasionally, and has a smartphone, a dual-band router can be had for under $100. I don't think our internet speed will increase much from where it is today given the infrastructure upgrades required, so a superfast tri-band router is generally not needed although that is what I wound up with.

The common manufacturers are Netgear, Asus, D-Link, TP-Link, and Linksys but there are many others. A router should be easy to set up and require little to no maintenance. You can read users' reviews at many web sites to help you make a decision.

Routers are fairly easy to install and setup. Many come with Apps for your smartphone which can guide you through the process. We also have club members who can help install and set up a new router.

So, in conclusion, a router upgrade can be a major improvement to your home network.🖥

Special Interest Groups (SIGs)

Most SIGs will meet at Edina Executive Plaza, Conference Room #102, 5200 Willson Road, Edina, MN
Confirm with a SIG group if they meet elsewhere.
For more info contact the SIG Leader(s) listed here.

Get SIG announcements!
Link from www.tcpc.com

Board of Directors*
All members are welcome! Check www.tcpc.com for location.
Selected Saturday mornings

Linux on Saturday
This is for the Linux newbie and those trying to come over from Microsoft to a different operating system.
Second Saturday @ 9 AM-Noon
Note: No Meetings June-August

Jack Ungerleider   612/418-3494 c
jack@jacku.com

Tech Topics
Technical presentation/discussion on various technical topics from the following areas:
- **Web/Internet**
- **Mobile Devices and Apps**
- **Playing with Programming**
- **DIY (3D Printing, R-Pi, other hobby electronics, etc.)**

Second Tuesday @ 6:00-7:00 PM
Every month
Right before the general meeting.

Jack Ungerleider   612/418-3494 c
jack@jacku.com

Microsoft Access
All levels. Presentations by expert developers within the group and by MS reps.
Third Saturday 9:00 AM—Noon
Note: No Meetings June-August

Steve Kuhlmey   952/934-8492
skuhlmey@hotmail.com

Microsoft Office
Addresses the use, integration, and nuances of the Microsoft Office applications.
Combined with Systems on Saturday
Third Saturday of the Month
9:00 AM—Noon
Note: No Meetings June-August

Steve Kuhlmey   952/934-8492
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Directions to **Summit Place** for **General Meetings**:
Proceed to Eden Prairie Center Flying Cloud Drive . [Flying Cloud Drive runs along the West side of the Eden Prairie Center.] Once you have driven past Eden Prairie Center (on the left) along Flying Cloud Drive you will come to a stop light at Prairie Center Drive. The next intersection with a stop light and left turn lane is Fountain Place. Turn left at Fountain Place and go straight into the parking lot. Turn left again to the first covered entry way of Summit Place. There is plenty of parking in the large parking lot in front of the first Summit Place covered entry way. When you enter the door at the first covered entry way, ask to be directed to the Performance Room for the TC/PC meeting. For a map of more detailed directions and *info on Web SIG and Board meeting*, check the TC/PC website.

Directions to **Edina Executive Plaza** for **Systems on Saturday, Access, Word and Picture Perfect SIGs**: Take Highway 100 to the 50th Street/Vernon exit. [If you have come from the north, cross back over Highway 100 to the east side.] Take the first right and go past Perkins [The golf course will be on your left.] and continue on the east frontage road (Willson Road) to the next building—5200 . There is ample parking in the building's lot. Conference Room #102 is on 1st floor.

Help yourself by helping others!
Join the team & share your knowledge with others.

Contact TC/PC at www.tcpc.com

Meetings start at 7:00 PM (9:00 AM on Saturday) unless otherwise noted. *Virtual Meetings during Covid pandemic..

November

Sun	Mon	Tues	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
8	9	10 7pm General Mtg TBA 6pm Tech Topics	11	12	13	14 9am-Noon Linux on Saturdays
15	16	17	18	19	20	21 9am—Noon Microsoft Office (including Access)
22	23	24	25	26	27	28
29	30	1	2	3	4	5

December

Sun	Mon	Tues	Wed	Thu	Fri	Sat
6	7	8 7pm General Mtg TBA 6pm Tech Topics	9	10	11	12 9am-Noon Linux on Saturday
13	14	15	16	17	18	19 9am-Noon Microsoft Office (including Access)
20	21	22	23	24	25	26
27	28	29	30			

Twin Cities PC USER GROUP

You have just read an issue of The Digital Viking.

Would you like to receive this delivered directly to your email or business each month?

As a member of TC/PC, the Twin Cities Personal Computer Group, one of the benefits
is reading this monthly publication at www.tcpc.com..

As a member of TC/PC, you may attend any or all of the monthly Special Interest Group (SIG) meetings and be eligible for
software drawings. The small membership fee also includes
access to real-live people with answers via our helplines, discounts, and various other perks.

Does membership in this group sound like a good way to increase your computer knowledge?

It's easy to do! Simply fill in the form below and mail it to the address shown.
(If you use the form in this issue, you will receive an extra month for joining now.)

11/20

Here's the info for my TC/PC Membership:

Full name_____

Company name_____

Address_____

City_____ State_____ Zip_____

❍Home ❍Business ❍Change address: ❍Perm. ❍Temp. 'til _____

Home phone_____ Work phone_____

Online address(es) _____

Where did you hear about TC/PC? _____

❍ I DO NOT want any of my information disclosed.
❍ I DO NOT want to receive any mailings

I'm signing up for:

❍ Individual/Family Membership ($18)
❍ Business Membership ($100)
If an existing member your # _____
Make checks payable to:
Twin Cities PC User Group
341 County Rd C2 W
Roseville, MN 55113

http://www.tcpc.com

❍ Check #_____ ❍ Bill me
❍ New member ❍ Renewal ❍ Prior member
I'm interested in:
❍ Training classes ❍ Volunteering
❍ Special Interest Groups: New User, Access, etc.
List here:

Administrative Use Only Rec'd_____ Chk#_____

November 10, 2020

General Meeting

**How to Use Free Online GIS Tools to En-
hance Your Outdoor Experience**

Presenters: Jim Grotz & Don Kick

Via Zoom

More info: www.tcpc.com

Twin Cities
PC USER GROUP

341 County Rd C2 W
Roseville, MN 55113

FIRST CLASS MAIL